

IN THE CLAIMS

8. (Currently amended) A cluster tool for semiconductor processing, comprising:

an ash/silylation chamber, said ash/silylation chamber configured to perform an ashing processing ~~and~~ followed by a silylation process on a low-k dielectric layer after a photoresist development and etching of the dielectric layer to repair damage to the dielectric layer from the ashing processing; and

a wafer in/out chamber, configured to introduce one or more wafers into said cluster tool.

9. (Original) The cluster tool of Claim 8, further comprising a processing chamber.

10. (Original) The cluster tool of Claim 9, wherein said processing chamber comprises a cap deposition module.

11. (Original) The cluster tool of Claim 10, wherein said cap deposition module is chosen from the group consisting of a PECVD module and a spin-on deposition module.

12. (Original) The cluster tool of Claim 9, wherein said processing chamber comprises an etch module.

13. (Currently amended) A cluster tool for semiconductor processing, comprising:

an etch/ash/silylation chamber, said etch/ash/silylation chamber configured to perform an etch process; followed by an ashing process followed by and a silylation process on a low-k dielectric layer after a photoresist development to repair damage to the dielectric layer from the ashing process; and

a wafer in/out chamber, configured to introduce one or more wafers into said cluster tool.

14. (Original) The cluster tool of Claim 13, wherein said etch/ash/silylation chamber further comprises a processing chamber.

15. (Original) The cluster tool of Claim 14, wherein said processing chamber comprises a cap deposition chamber.

16. (Original) The cluster tool of Claim 15, wherein said cap deposition chamber is chosen from the group consisting of a PECVD chamber and a spin-on deposition chamber.

17. (Currently amended) A cluster tool for semiconductor processing, comprising:
an organic removal/silylation chamber, configured to remove organic sacrificial material from a low-k layer and configured to perform a silylation process after removing the sacrificial material to repair damage to the low-k layer from the sacrificial material removal process; and

a wafer in/out chamber, configured to introduce one or more wafers into said cluster tool.

18. (Original) The cluster tool of Claim 17, further comprising a deposition chamber configured to deposit said low-k layer including organic sacrificial material onto one or more wafers.

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19. (Original) The cluster tool of Claim 18, wherein said deposition chamber is chosen from the group consisting of a PECVD chamber and a spin-on deposition chamber.

20. (Original) The cluster tool of Claim 17, further comprising a cap deposition chamber.

21. (Original) The cluster tool of Claim 20, wherein said cap deposition chamber is chosen from the group consisting of a PECVD chamber and a spin-on deposition chamber.

48. (New) The cluster tool of Claim 8, wherein said ashing processing comprises a formation of hydrophilic bonds in said low-k dielectric layer.

49. (New) The cluster tool of Claim 48, wherein said silylation process comprises a replacement of at least some of said hydrophilic bonds with hydrophobic bonds.

50. (New) The cluster tool of Claim 8, wherein said ashing processing comprises a removal of photoresist with an oxygen plasma.

51. (New) The cluster tool of Claim 13, wherein said ashing process comprises a formation of hydrophilic bonds in said low-k dielectric layer.

52. (New) The cluster tool of Claim 51, wherein said silylation process comprises a replacement of at least some of said hydrophilic bonds with hydrophobic bonds.

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53. (New) The cluster tool of Claim 13, wherein said ashing processing comprises a removal of photoresist with an oxygen plasma.

54. (New) The cluster tool of Claim 17, wherein said sacrificial material removal process comprises a formation of hydrophilic bonds in said low-k layer.

55. (New) The cluster tool of Claim 54, wherein said silylation process comprises a replacement of at least some of said hydrophilic bonds with hydrophobic bonds.

56. (New) The cluster tool of Claim 17, wherein said ashing processing comprises a removal of photoresist with an oxygen plasma.

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